FCC and ISED Test Report

HID Global Corporation (US)
BluFi™ POE 5G with Universal Power, Model: BluFI-UP00

In accordance with FCC 47 CFR Part 15B and ICES-003

Add value.
Inspire trust.

Prepared for: HID Global Corporation (US)
600 Corporate Drive
Suite 300
Fort Lauderdale
FL 33334
UNITED STATES

FCC ID: 2BCL8BVBFPOEUP IC: 24824-BVBFPOEUP

COMMERCIAL-IN-CONFIDENCE

Document 75957186-02 Issue 02

SIGNATURE			
NAME	**JOB TITLE**	**RESPONSIBLE FOR**	**ISSUE DATE**
Matthew Russell	Chief Engineer	Authorised Signatory	04 September 2023

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD document control rules.

ENGINEERING STATEMENT
The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Part 15B and ICES-003. The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Ravi Kishore Darshanam	04 September 2023	

FCC Accreditation
330364 Bearley Test Laboratory

Industry Canada Accreditation
2932E Bearley Test Laboratory

EXECUTIVE SUMMARY
A sample of this product was tested and found to be compliant with FCC 47 CFR Part 15B: 2021 and ICES-003: Issue 7: 2020 for the tests detailed in section 1.3.

ACCREDITATION
Our UKAS Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our UKAS Accreditation. Results of tests not covered by our UKAS Accreditation Schedule are marked NUA (Not UKAS Accredited).

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Glasgow G75 0QF, United Kingdom
Registered number: SC215164

TUV SUD Ltd is a
TÜV SÜD Group Company

Phone: +44 (0) 1489 558100
Fax: +44 (0) 1489 558101
www.tuvsud.com/en

TÜV SÜD
Snitterfield Road,
Bearley, Stratford upon Avon
Warwickshire
CV37 0EX
United Kingdom

Contents

1 Report Summary

1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
1	First Issue	04 July 2023
2	Second Issue - Update FCC ID	04 September 2023

Table 1

1.2 Introduction

Applicant	HID Global Corporation (US)
Manufacturer	HID Global Corporation (US)
Model Number(s)	BluFi-UP00
Serial Number(s)	7110257832548623004
Hardware Version(s)	1.4
Software Version(s)	WIFI 2015 BLE 451
Number of Samples Tested	1
Test Specification/Issue/Date	FCC 47 CFR Part 15B: 2021 ICES-003: Issue 7: 2020
Order Number Date	1180900792 30-November-2022
Date of Receipt of EUT	24-November-2022
Start of Test	02-December-2022
Finish of Test	07-December-2022
Name of Engineer(s)	Ravi Kishore Darshanam
Related Document(s)	ANSI C63.4: 2014

1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15B and ICES-003 is shown below.

Section	Specification Clause		Test Description	Modification State	Result	Comments/Base Standard
	FCC	ICES				
Configuration and Mode: DC Powered - BLE Communication Link + Ethernet						
2.1	15.109	3.2	Radiated Disturbance	0	Pass	ANSI C63.4: 2014

Table 2

1.4 Declaration of Build Status

MAIN EUT			
MANUFACTURING DESCRIPTION	BluFi™ POE 5G with Universal Power		
MANUFACTURER	HID Global		
MODEL	BluFi-UP00		
PART NUMBER	BVBFPOEUP		
HARDWARE VERSION	1.4		
SOFTWARE VERSION	WIFI 2015 BLE 451		
PSU VOLTAGE/FREQUENCY/CURRENT	DC 9-24V and POE 3-57V		
HIGHEST INTERNALLY GENERATED FREQUENCY	5.825 GHz		
FCC ID (if applicable)			
INDUSTRY CANADA ID (if applicable)			
TECHNICAL DESCRIPTION (a brief technical description of the intended use and operation)	•Gateway that can accept a variety of WIFI spectrums, 2.4 and 5 Ghz. •Gateway that uses a provides universal power adapter to handle multiple input voltages. Allows gateway to be powered by variety of HID and-or third-party accessories. These can include, but are not necessarily limited to: 9V, 12V, Solar, External Batteries, POE, USB, etc. •Compatible with Bluetooth low-energy (BLE) radio that is capable of transmitting and receiving all standard HID IOT sBeacon, tracking packets.		
COUNTRY OF ORIGIN	China		
RF CHARACTERISTICS (if applicable)			
TRANSMITTER FREQUENCY OPERATING RANGE (MHz)	2.402-2.4835GHz 5.150-5.250GHz		
RECEIVER FREQUENCY OPERATING RANGE (MHz)	2.402-2.4835GHz 5.150-5.250GHz		
INTERMEDIATE FREQUENCIES			
EMISSION DESIGNATOR(S): https://fccid.io/Emissions-Designator/			
MODULATION TYPES: (i.e. GMSK, QPSK)	OFDM		
OUTPUT POWER (W or dBm)	WiFi 12dbm BLE 5dbm		
SEPARATE BATTERY/POWER SUPPLY (if applicable)			
MANUFACTURING DESCRIPTION			
MANUFACTURER			
TYPE			
PART NUMBER			
PSU VOLTAGE/FREQUENCY/CURRENT			
COUNTRY OF ORIGIN			
MODULES (if applicable)			
MANUFACTURING DESCRIPTION	IEEE802.11a/b/g/n W-LAN Smart Module		
MANUFACTURER	Murata		
TYPE	Module		
POWER	5V/3.9/1.5V		
FCC ID	VPYLB1GC		
INDUSTRY CANADA ID	772C-LB1GC		
EUROPE	EN300328/301893		
JAPAN	001-P00975		
EMISSION DESIGNATOR			
DHSS/FHSS/COMBINED OR OTHER			
COUNTRY OF ORIGIN			

The above information was provided by the applicant.

1.5 Product Information

1.5.1 Technical Description

The Equipment under test (EUT) was a BluFi™ POE 5G with Universal Power and manufacture HID Global.

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The primary function of the EUT is to connect Gateway that can accept a variety of WIFI spectrums, 2.4 and 5 GHz, Compatible with Bluetooth low-energy (BLE) radio that is capable of transmitting and receiving all standard HID IOTs Beacon, tracking packets.

Figure 1 – EUT Front, Top & LHS View

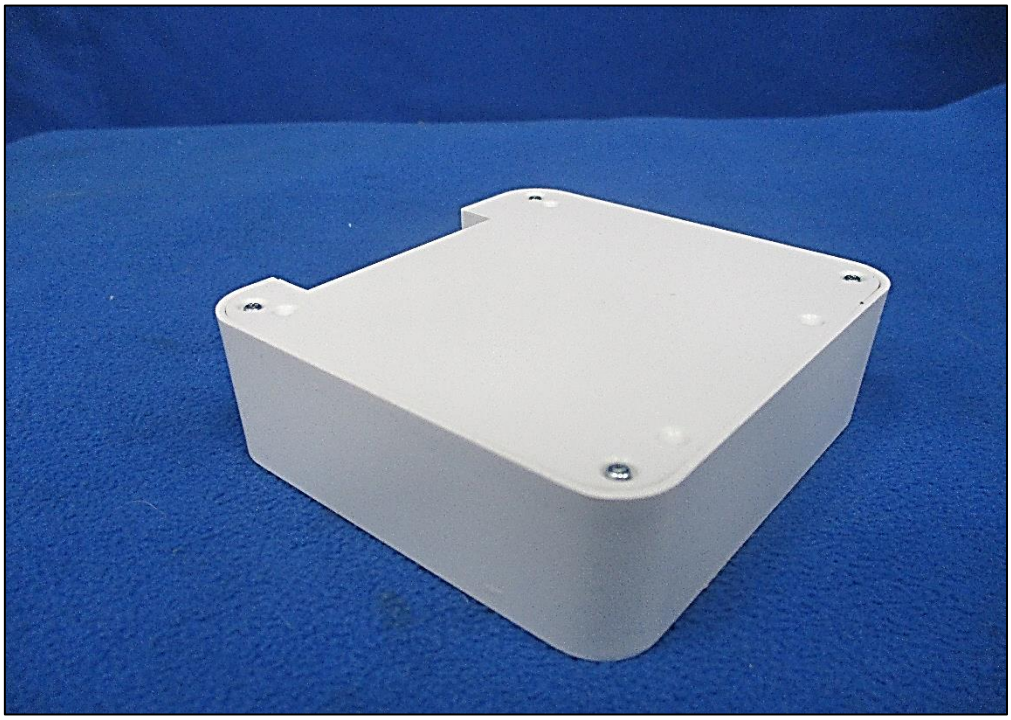

Figure 2 - EUT Back, Bottom & RHS View

1.5.2 EUT Port/Cable Identification

Port	Max Cable Length specified	Usage	Type	Screened
Ethernet (POE)	>3m	Signal & Power	RJ45	No

Table 3

1.5.3 Test Configuration

Configuration	Description
DC Powered	The EUT was powered through an DC Source

Table 4

1.5.4 Modes of Operation

Mode	Description
BLE Communication Link + Ethernet	The EUT was powered through a DC Source The EUTs Bluetooth, Ethernet were enabled, pinging through laptop were active and temperature was monitored through Bluflu and Atlas application / website.

Table 5

1.6 Deviations from the Standard

No deviations from the applicable test standard were made during testing.

1.7 EUT Modification Record

The table below details modifications made to the EUT during the test programme.

The modifications incorporated during each test are recorded on the appropriate test pages.

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
Model: BluFI-UP00 , Serial Number: 7110257832548623004			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 6

1.8 Test Location

TÜV SÜD conducted the following tests at our Bearley Test Laboratory.

Test Name	Name of Engineer(s)	Accreditation
Configuration and Mode: DC Powered - BLE Communication Link + Ethernet		
Radiated Disturbance	Ravi Kishore Darshanam	UKAS

Table 7

Office Address:

Snitterfield Road
Bearley
Warwickshire
CV37 OEX
United Kingdom

2 Test Details

2.1 Radiated Disturbance

2.1.1 Specification Reference

FCC 47 CFR Part 15B Clause 15.109
ICES-003, Clause 3.2

2.1.2 Equipment Under Test and Modification State

BVBFPOEUP, Serial Number: 7110257832548623004 - Modification State 0

2.1.3 Date of Test

02-December-2022 to 07-December-2022

2.1.4 Test Method

DC Powered - BLE Communication Link + Ethernet
The EUT was set up on a non-conductive table 0.8 m above a reference ground plane within a semi-anechoic chamber on a remotely controlled turntable.

A pre-scan of the EUT emissions profile using a peak detector was made at a 3 m antenna distance whilst varying the antenna-to-EUT azimuth and polarisation.

For an EUT which could reasonable be used in multiple planes, pre-scans were performed with the EUT orientated in X, Y and Z planes with reference to the ground plane.

Using a list of the highest emissions detected during the pre-scan along with their bearing and associated antenna polarisation, the EUT was then formally measured using a Quasi-Peak, Peak or CISPR Average detector as appropriate.

The readings were maximised by adjusting the antenna height, polarisation and turntable azimuth, in accordance with the specification.

2.1.5 Example Calculation

Below 1 GHz:

Quasi-Peak level (dBµV/m) = Receiver level (dBµV) + Correction Factor (dB/m)
Margin (dB) = Quasi-Peak level (dBµV/m) - Limit (dBµV/m)

Above 1 GHz:

CISPR Average level (dBµV/m) = Receiver level (dBµV) + Correction Factor (dB/m)
Margin (dB) = CISPR Average level (dBµV/m) - Limit (dBµV/m)

Peak level (dBµV/m) = Receiver level (dBµV) + Correction Factor (dB/m)
Margin (dB) = Peak level (dBµV/m) - Limit (dBµV/m)

2.1.6 Example Test Setup Diagram

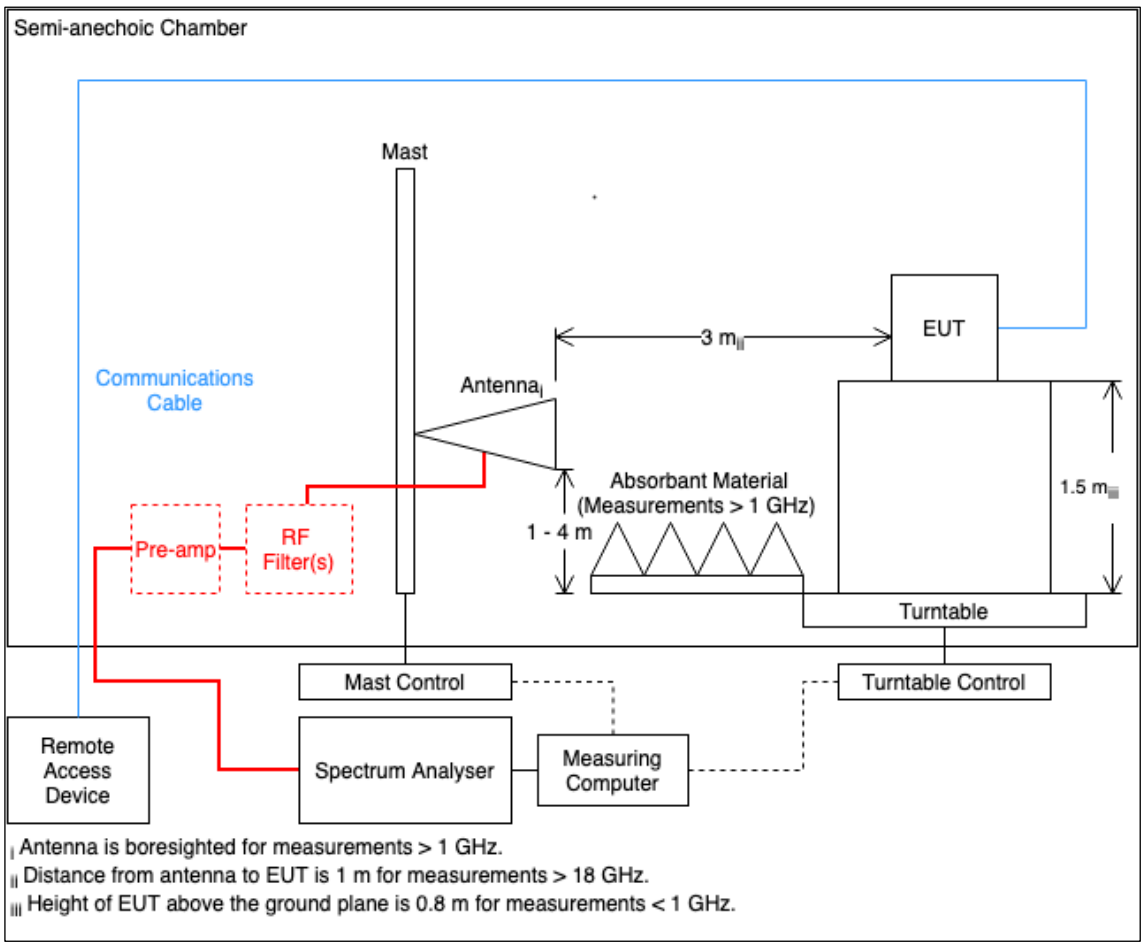

Figure 3

2.1.7 Environmental Conditions

Ambient Temperature	15.8 °C - 15.9°C
Relative Humidity	54.7 % - 55.3 %
Atmospheric Pressure	990.0 mbar - 1015.0 mbar

2.1.8 Specification Limits

Required Specification Limits, Field Strength - Class A Test Limit at a 10 m Measurement Distance- extrapolated BELOW 1GHz		
Frequency Range (MHz)	Test Limit (µV/m)	Test Limit (dBµV/m)
30 to 88	100	39.1
88 to 216	150	43.5
216 to 960	200	46.4
Above 960	500	49.5
Required Specification Limits, Field Strength - Class A Test Limit at a 3 m Measurement Distance- 1GHz-18GHz		
Frequency Range (MHz)	Peak Test Limit (dBµV/m)	Average Test Limit (dBµV/m)
Above 1000	79.5	59.5
Required Specification Limits, Field Strength - Class A Test Limit at a 1 m Measurement Distance- 18GHz-30GHz		
Frequency Range (MHz)	Peak Test Limit (dBµV/m)	Average Test Limit (dBµV/m)
Above 1000	79.5	59.5
Supplementary information: Note 1. A Quasi-peak detector is to be used for measurements below 1 GHz. Note 2. A CISPR Average detector is to be used for measurements above 1 GHz. Note 3. The Peak test limit above 1 GHz is 20 dB higher than the CISPR Average test limit.		

Table 8

Note: - Radiated emissions were measured in a 3-metre chamber and the results were then extrapolated to show a 10 metre measurement using an inverse proportionality factor of 20dB per decade.

2.1.9 Test Results

Results for Configuration and Mode: DC Powered - BLE Communication Link + Ethernet.

This test was performed to the requirements of the Class A limits.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

Highest frequency generated or used within the EUT: 5.25GHz
Which necessitates an upper frequency test limit of 30 GHz

The EUT is handheld, body-worn, or ceiling-mounted equipment and has therefore been tested in three different orientations in accordance with ANSI C63.4, Clause 6.3.2.1.

Note:- As the EUT was transmitting between 2402 to 2484MHz, the signals (and there related harmonics) were deemed intentional transmit frequencies and not taken into consideration for final measurements.

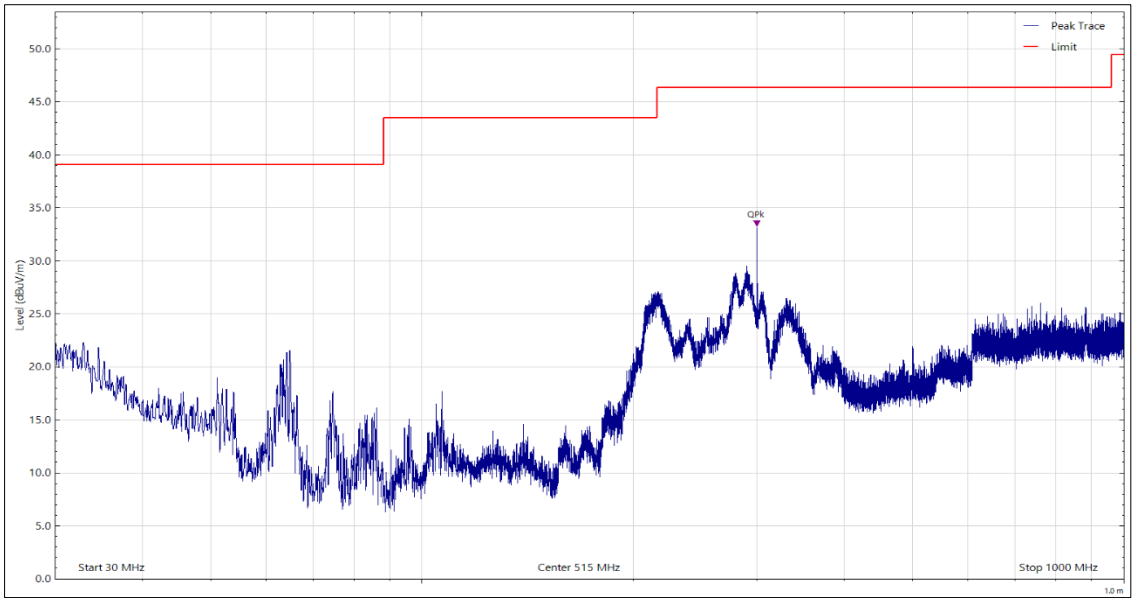

Figure 4 - 30 MHz to 1 GHz, Quasi-Peak, Horizontal - X Orientation

No other final measurements were made as all other peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

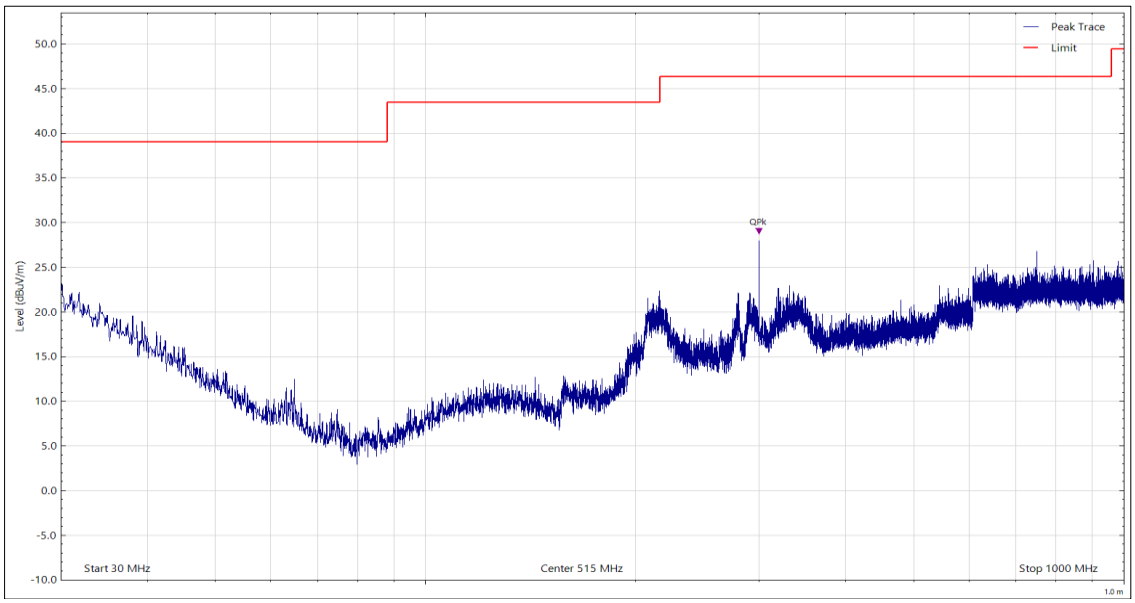

Figure 5 - 30 MHz to 1 GHz, Quasi-Peak, Vertical - X Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
299.997	28.56	46.40	-17.84	Q-Peak	51	106	Vertical	X

Table 9

No other final measurements were made as all other peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

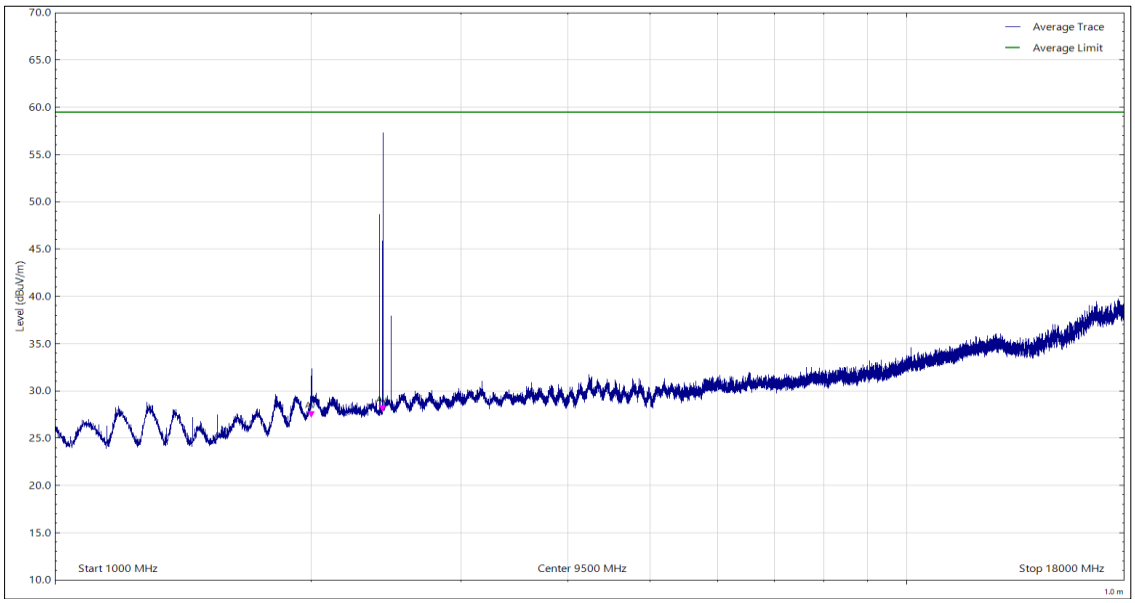

Figure 6 - 1 GHz to 18 GHz, CISPR Average, Horizontal - X Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
2000.170	27.01	59.50	-32.49	CISPR Avg	143	363	Horizontal	X
2426.297	27.67	59.50	-31.83	CISPR Avg	350	106	Horizontal	X

Table 10

No other final measurements were made as all other peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

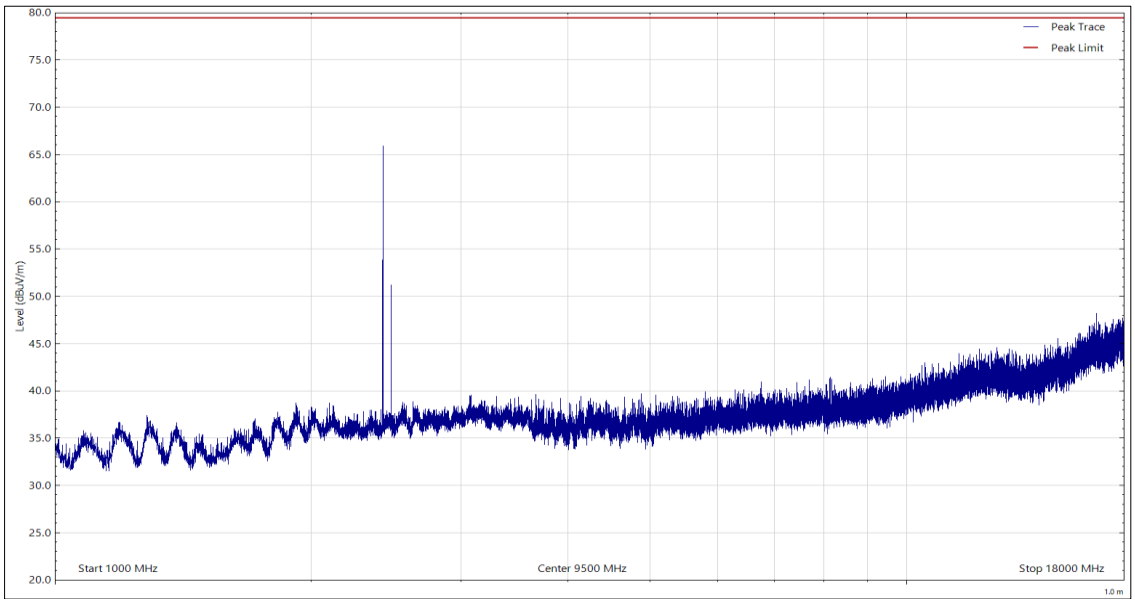

Figure 7 - 1 GHz to 18 GHz, Peak, Horizontal - X Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								X

Table 11

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

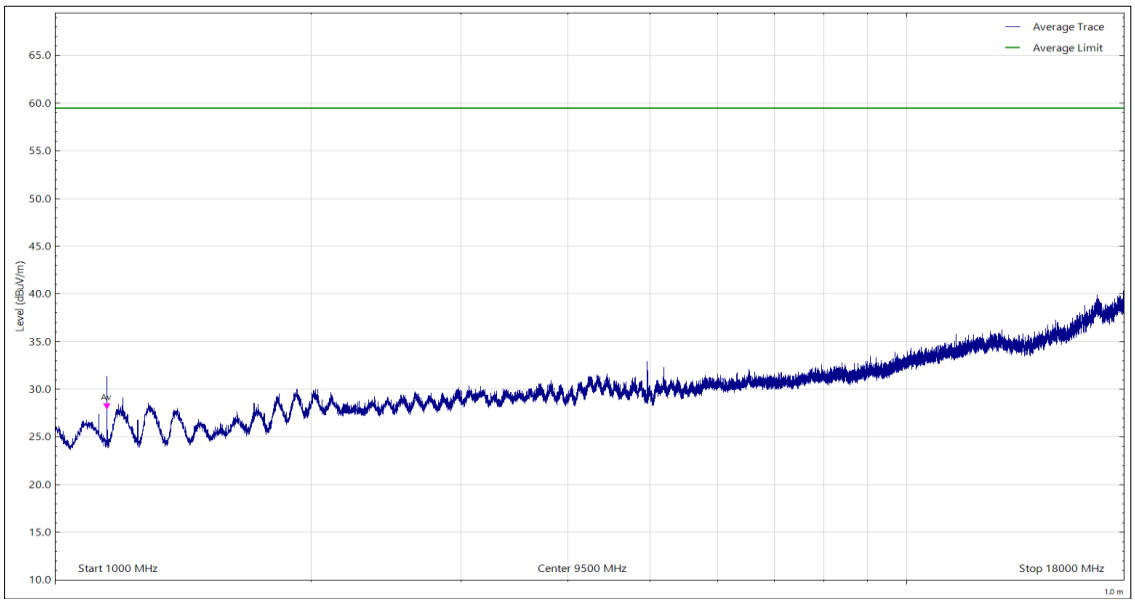

Figure 8 - 1 GHz to 18 GHz, CISPR Average, Vertical - X Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
1150.251	27.73	59.50	-31.77	CISPR Avg	93	110	Vertical	X

Table 12

No other final measurements were made as all other peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

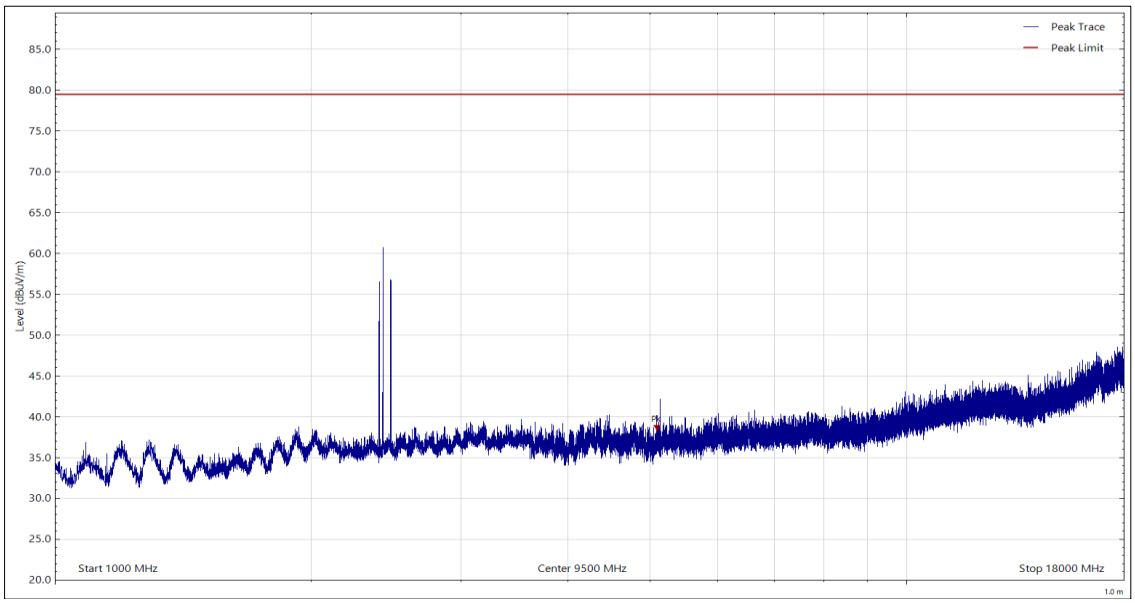

Figure 9 - 1 GHz to 18 GHz, Peak, Vertical - X Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
5098.615	38.01	79.50	-41.49	Peak	183	109	Vertical	X

Table 13

No other final measurements were made as all other peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

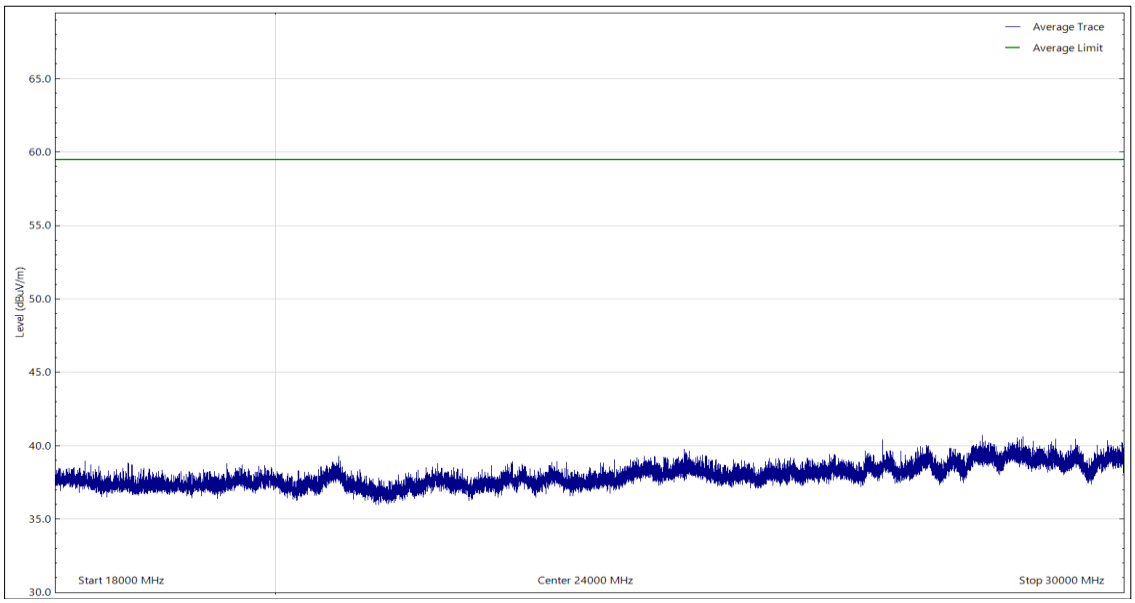

Figure 10 - 18 GHz to 30 GHz, CISPR Average, Horizontal - X Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								X

Table 14

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

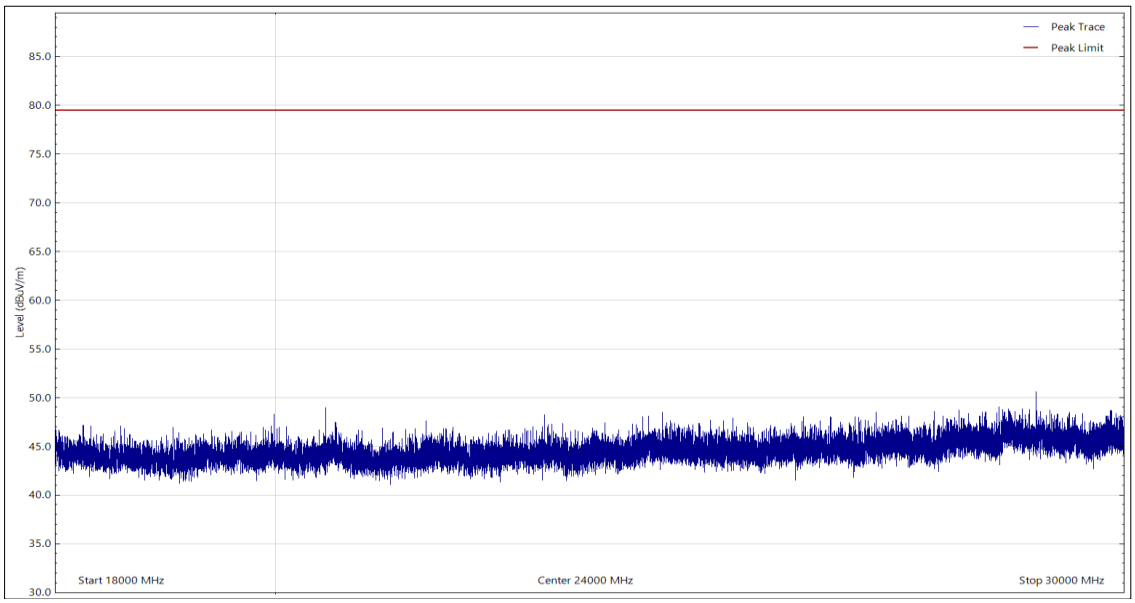

Figure 11 - 18 GHz to 30 GHz, Peak, Horizontal - X Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								X

Table 15

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

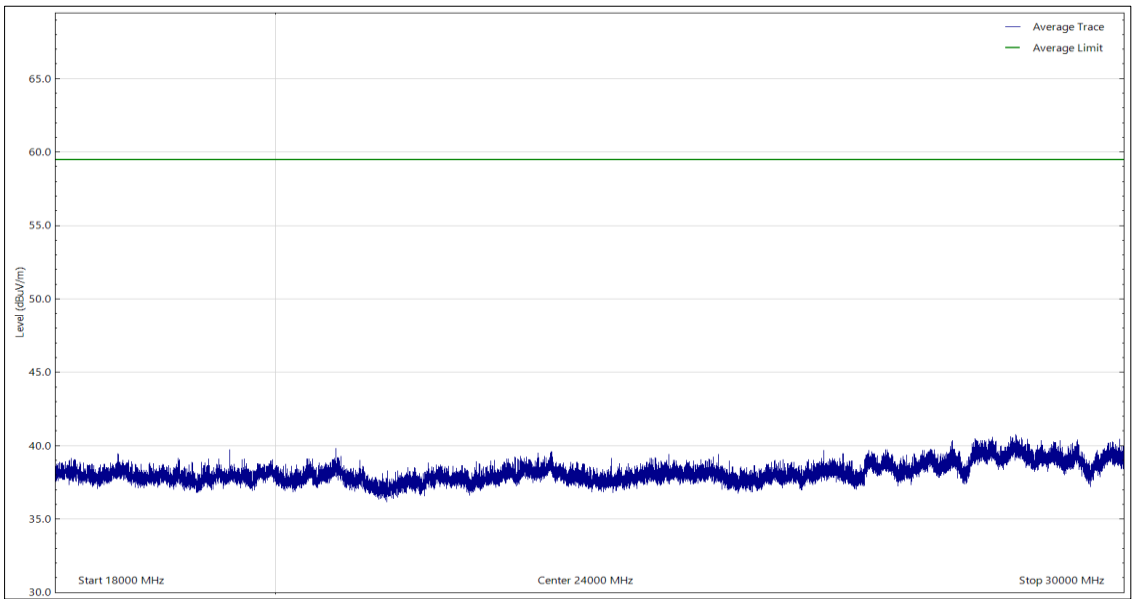

Figure 12 - 18 GHz to 30 GHz, CISPR Average, Vertical - X Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								X

Table 16

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

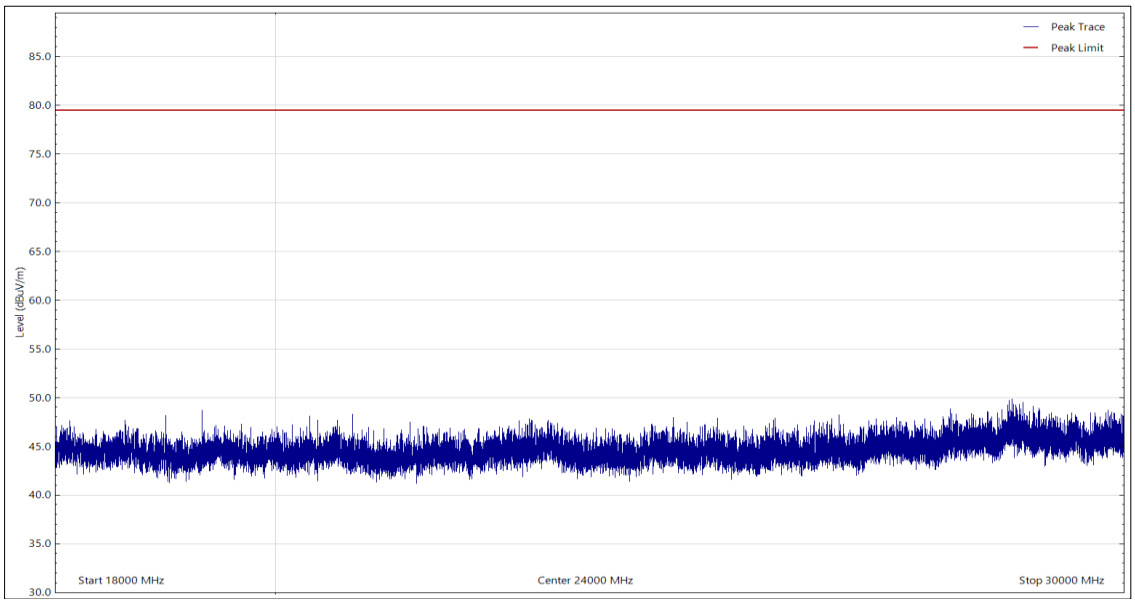

Figure 13 - 18 GHz to 30 GHz, Peak, Vertical - X Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								X

Table 17

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

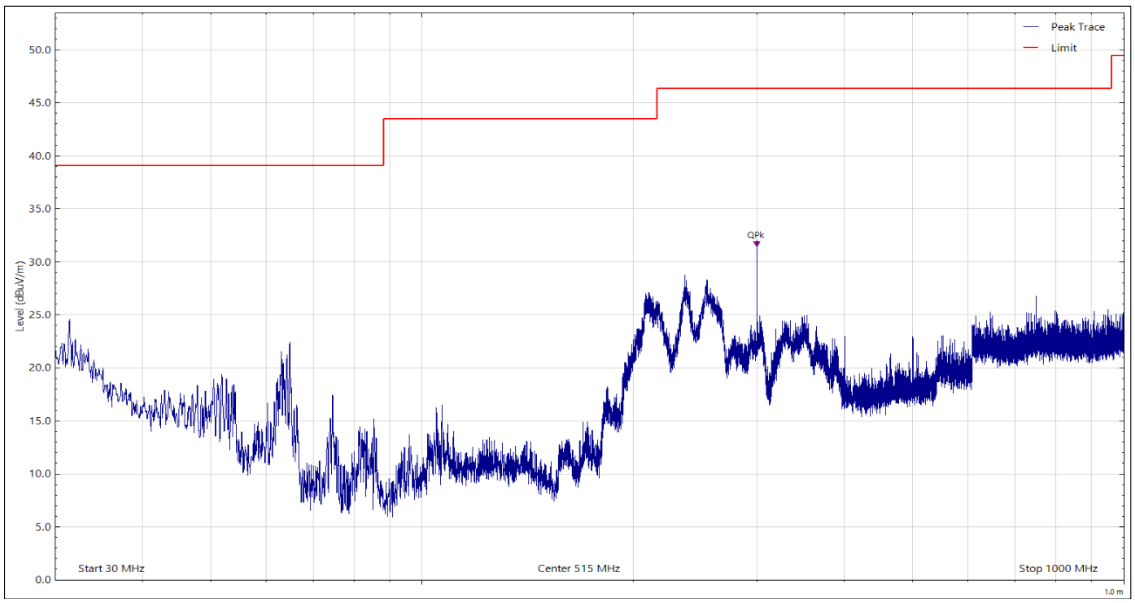

Figure 14 - 30 MHz to 1 GHz, Quasi-Peak, Horizontal - Y Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
299.994	31.25	46.40	-15.15	Q-Peak	299	124	Horizontal	Y

Table 18

No other final measurements were made as all other peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

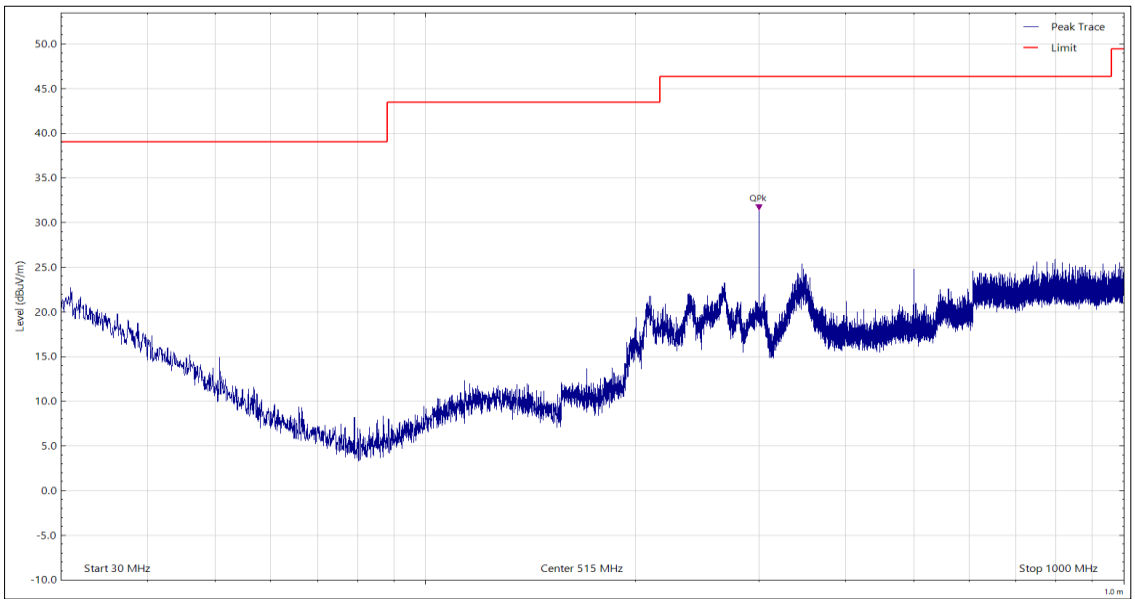

Figure 15 - 30 MHz to 1 GHz, Quasi-Peak, Vertical - Y Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
299.999	31.19	46.40	-15.21	Q-Peak	0	120	Vertical	Y

Table 19

No other final measurements were made as all other peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

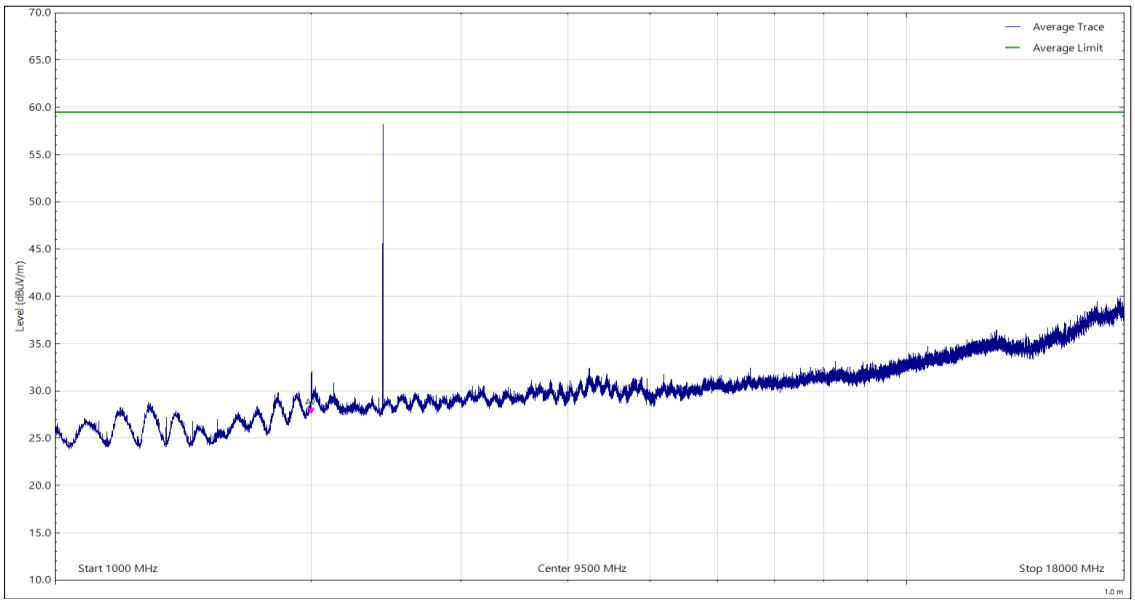

Figure 16 - 1 GHz to 18 GHz, CISPR Average, Horizontal - Y Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
2000.165	27.41	59.50	-32.09	CISPR Avg	1	346	Horizontal	Y

Table 20

No other final measurements were made as all other peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

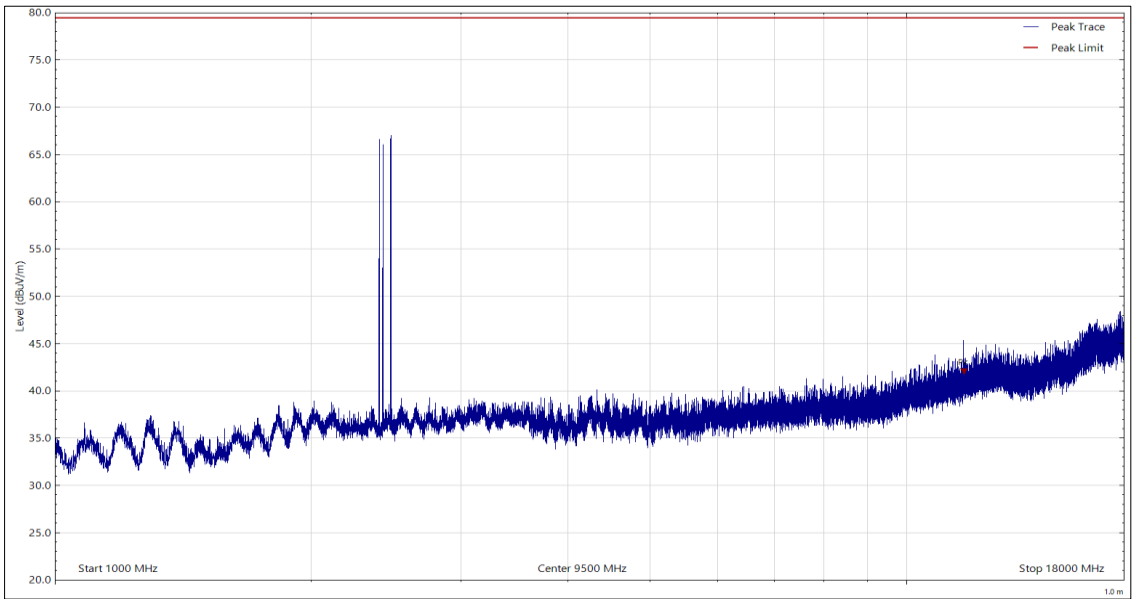

Figure 17 - 1 GHz to 18 GHz, Peak, Horizontal - Y Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
11700.790	41.54	79.50	-37.96	Peak	265	193	Horizontal	Y

Table 21

No other final measurements were made as all other peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

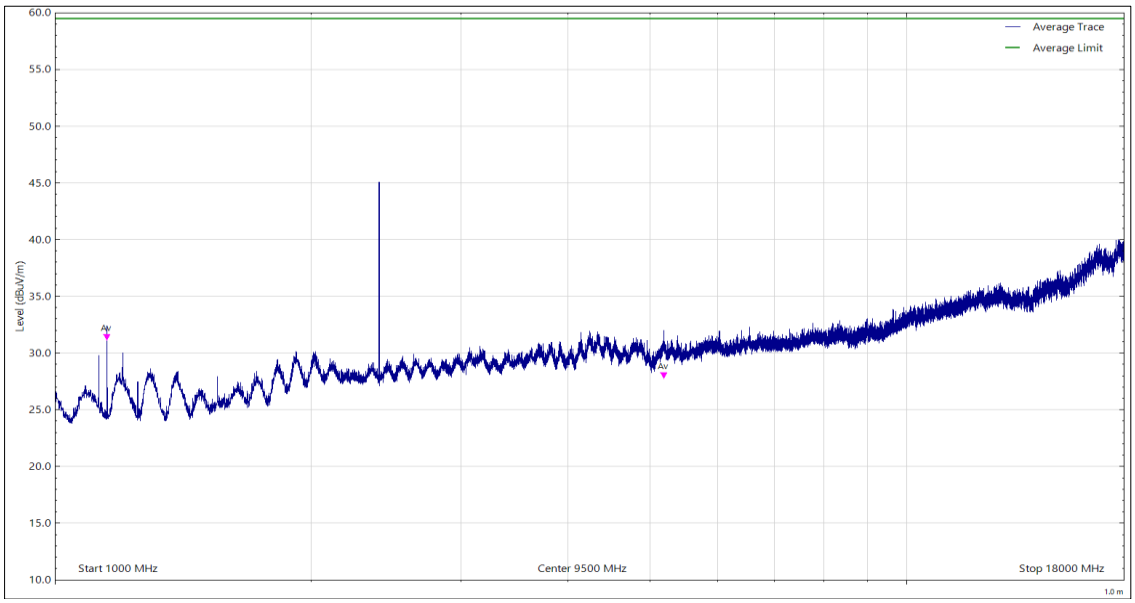

Figure 18 - 1 GHz to 18 GHz, CISPR Average, Vertical - Y Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
1150.096	31.00	59.50	-28.50	CISPR Avg	202	100	Vertical	Y
5185.963	27.63	59.50	-31.87	CISPR Avg	74	100	Vertical	Y

Table 22

No other final measurements were made as all other peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

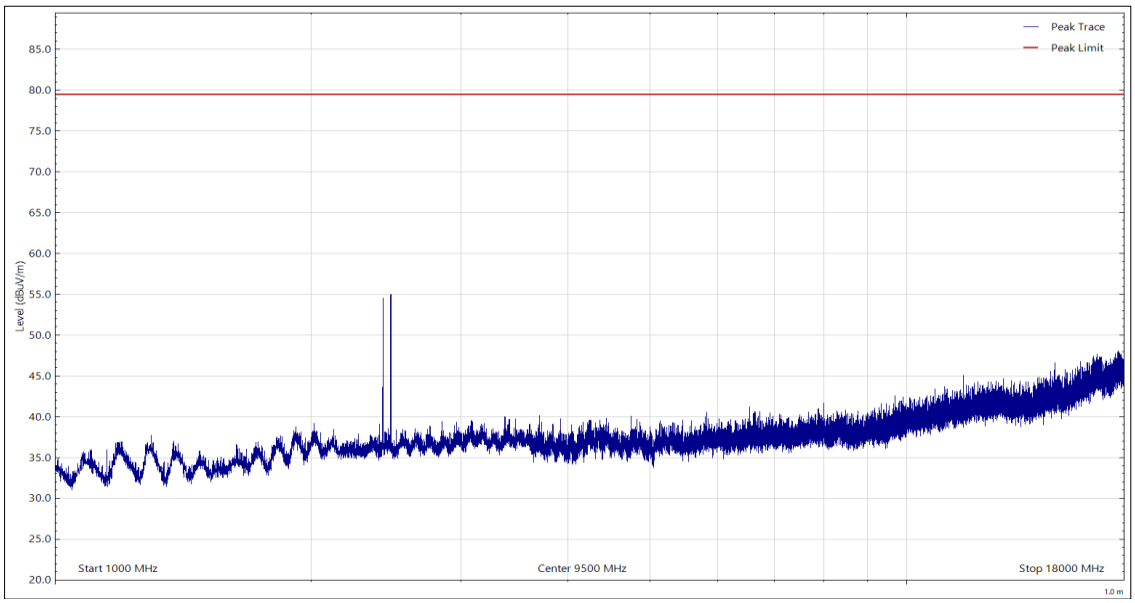

Figure 19 - 1 GHz to 18 GHz, Peak, Vertical - Y Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								Y

Table 23

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

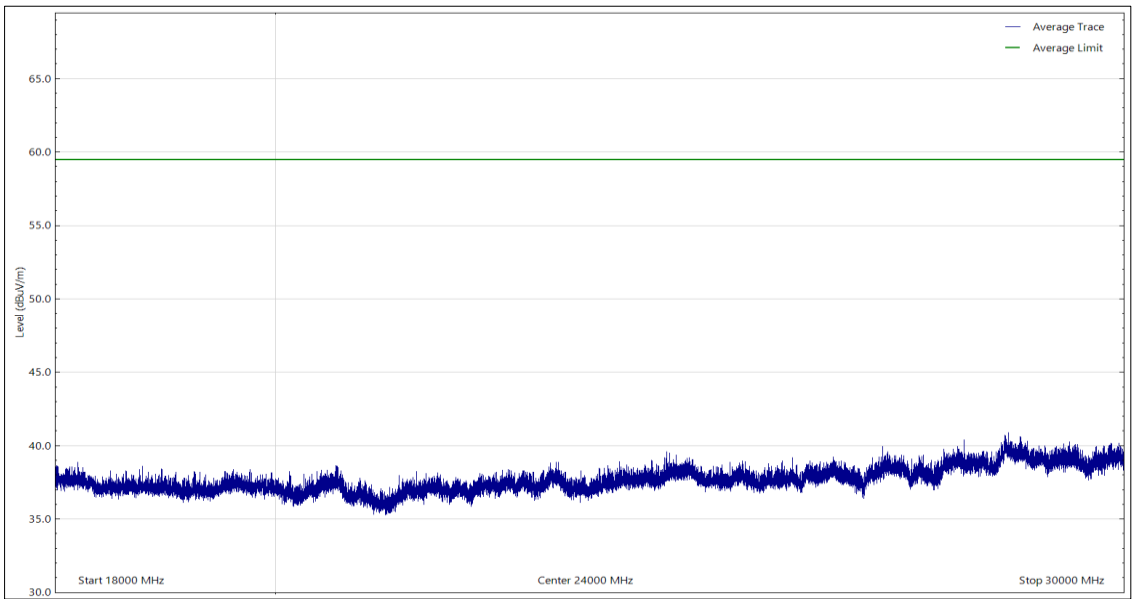

Figure 20 - 18 GHz to 30 GHz, CISPR Average, Horizontal - Y Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								Y

Table 24

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

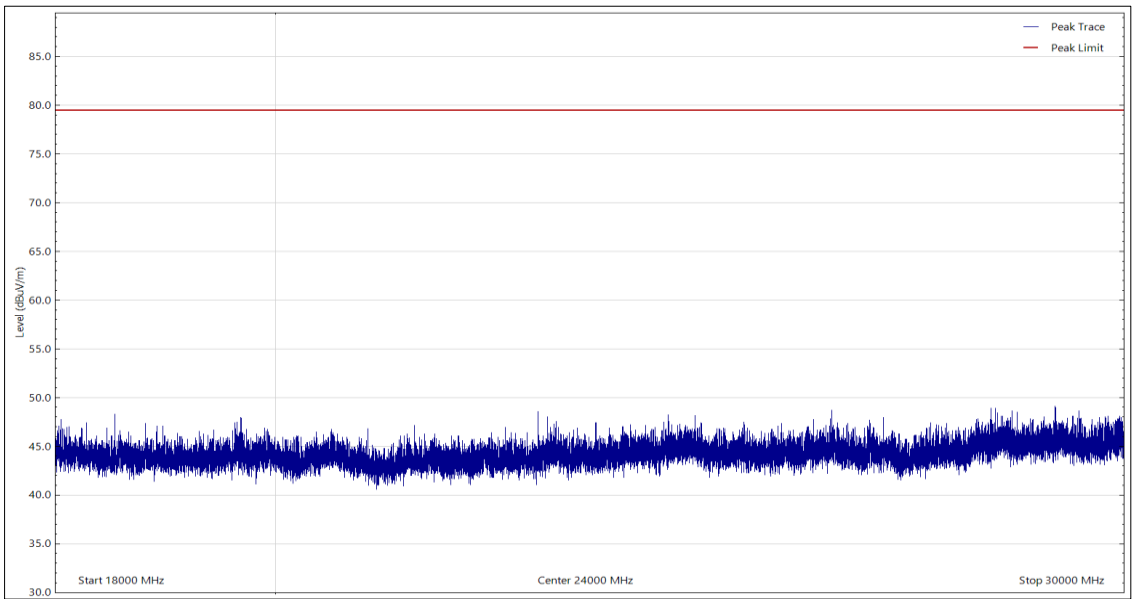

Figure 21 - 18 GHz to 30 GHz, Peak, Horizontal - Y Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								Y

Table 25

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

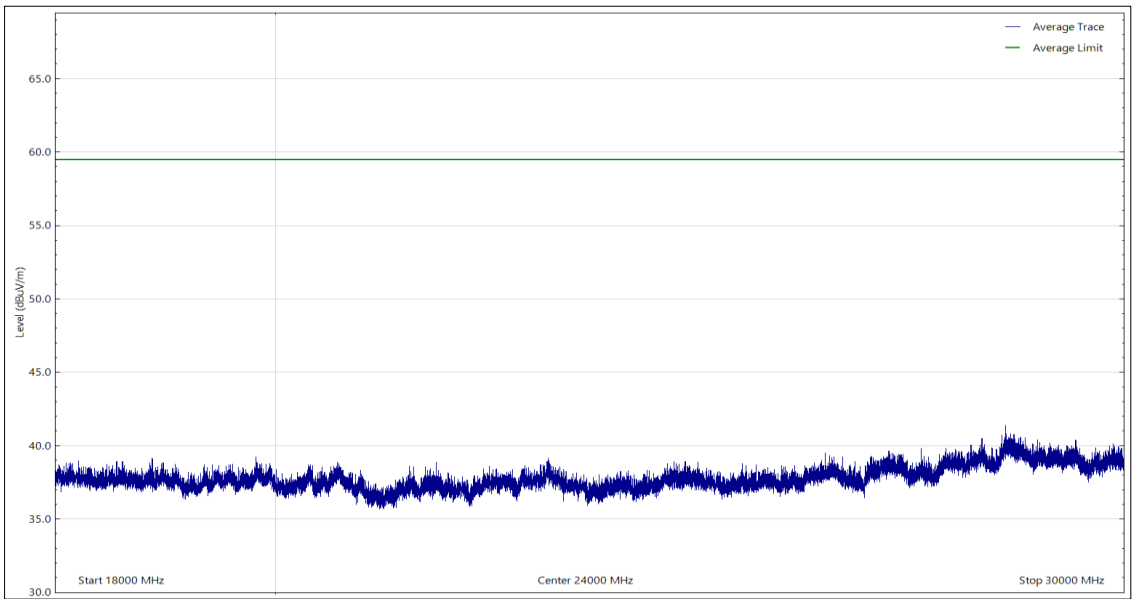

Figure 22 - 18 GHz to 30 GHz, CISPR Average, Vertical - Y Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								Y

Table 26

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

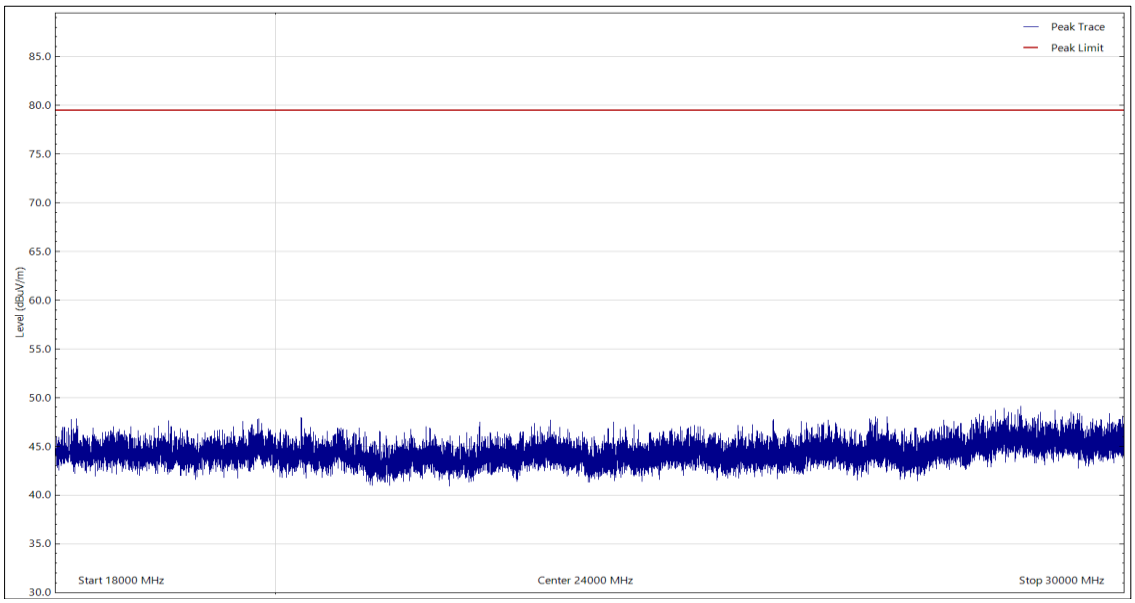

Figure 23 - 18 GHz to 30 GHz, Peak, Vertical - Y Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								Y

Table 27

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

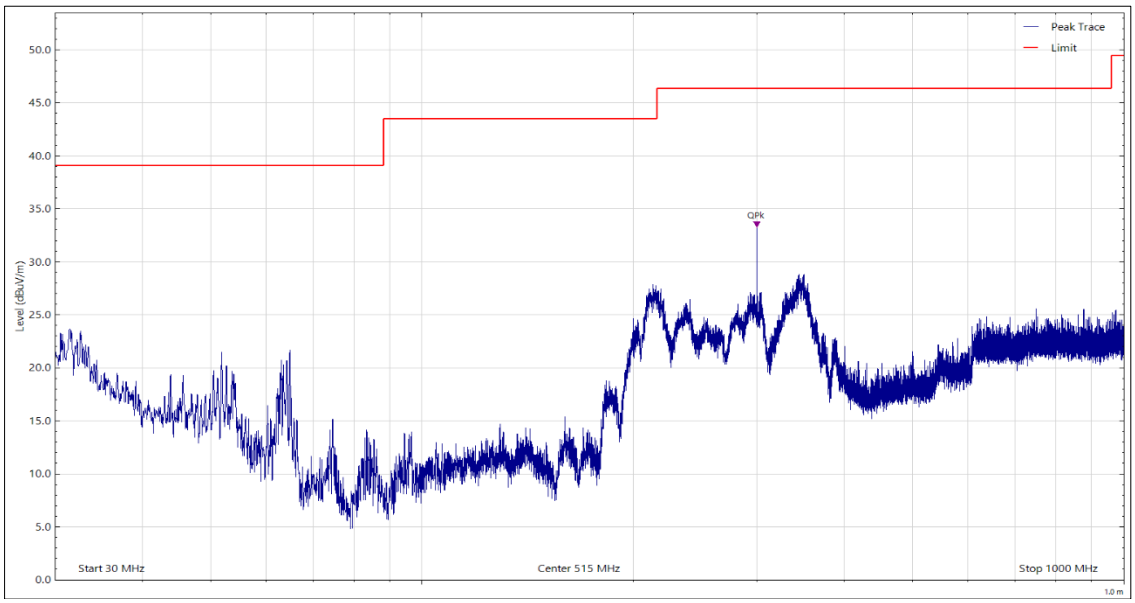

Figure 24 - 30 MHz to 1 GHz, Quasi-Peak, Horizontal - Z Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
299.988	33.11	46.40	-13.29	Q-Peak	296	251	Horizontal	Z

Table 28

No other final measurements were made as all other peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

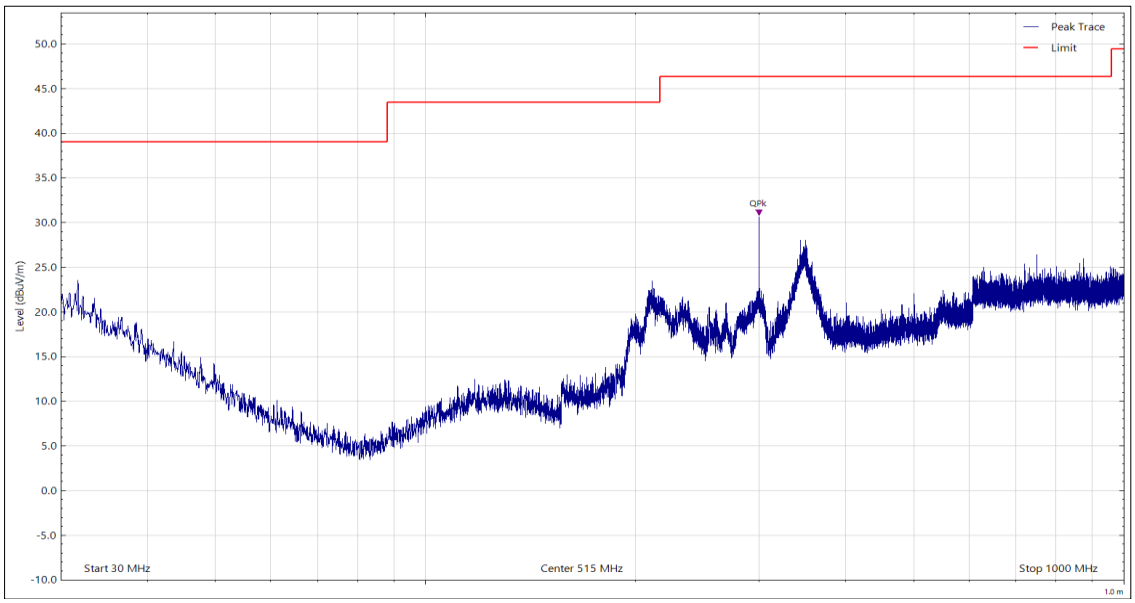

Figure 25 - 30 MHz to 1 GHz, Quasi-Peak, Vertical - Z Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
300.004	30.58	46.40	-15.82	Q-Peak	32	100	Vertical	Z

Table 29

No other final measurements were made as all other peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

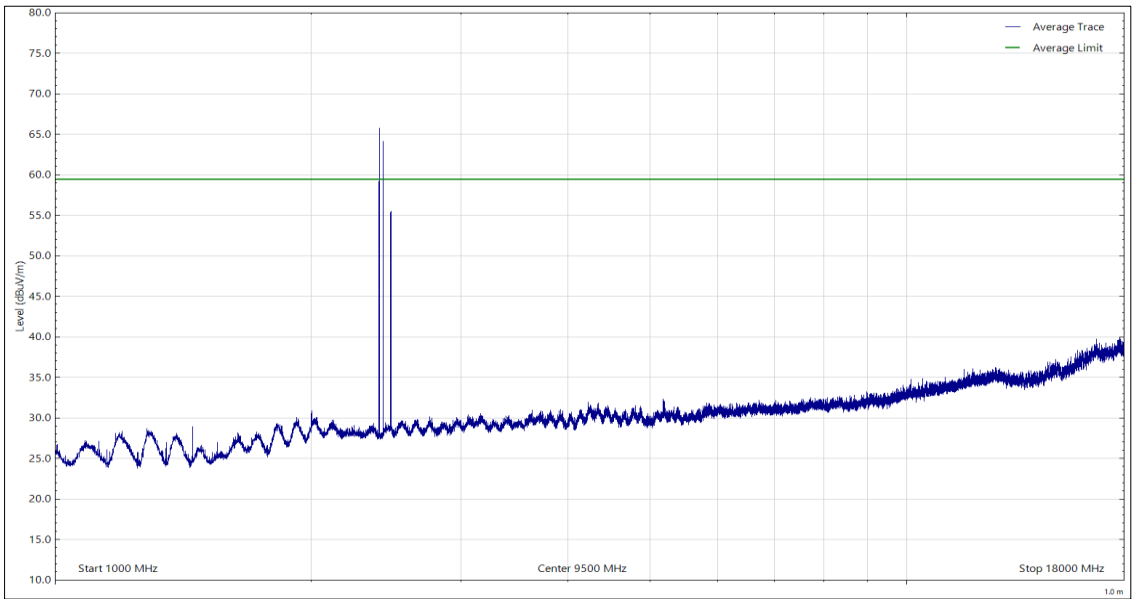

Figure 26 - 1 GHz to 18 GHz, CISPR Average, Horizontal - Z Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								Z

Table 30

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

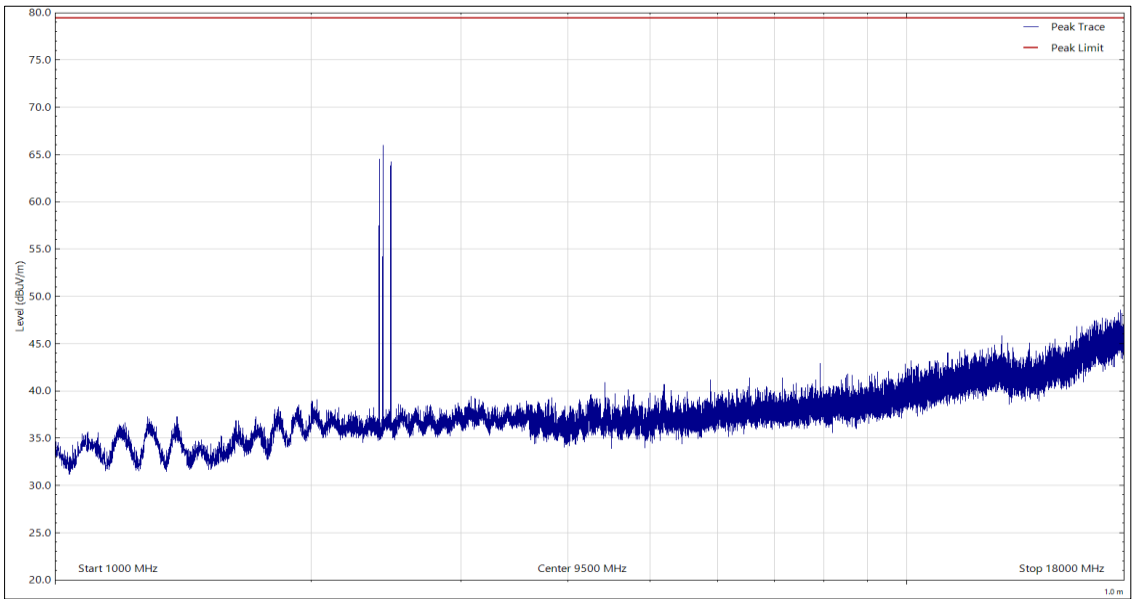

Figure 27 - 1 GHz to 18 GHz, Peak, Horizontal - Z Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								Z

Table 31

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

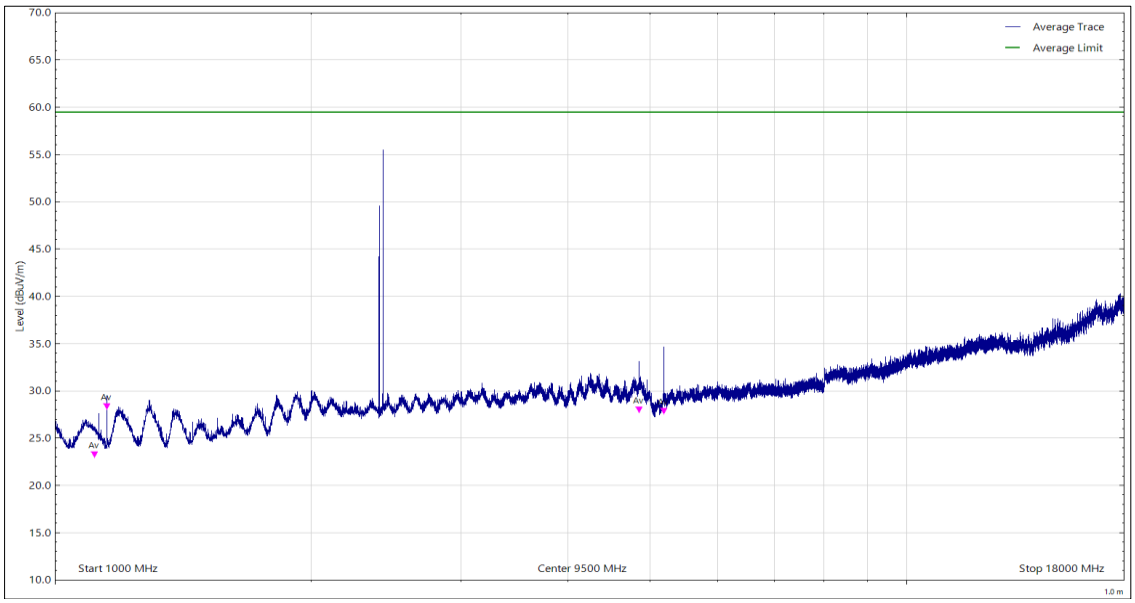

Figure 28 - 1 GHz to 18 GHz, CISPR Average, Vertical - Z Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
1113.514	22.78	59.50	-36.72	CISPR Avg	201	110	Vertical	Z
1150.041	27.86	59.50	-31.64	CISPR Avg	314	100	Vertical	Z
4857.080	27.55	59.50	-31.95	CISPR Avg	293	243	Vertical	Z
5188.798	27.36	59.50	-32.14	CISPR Avg	350	100	Vertical	Z

Table 32

No other final measurements were made as all other peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

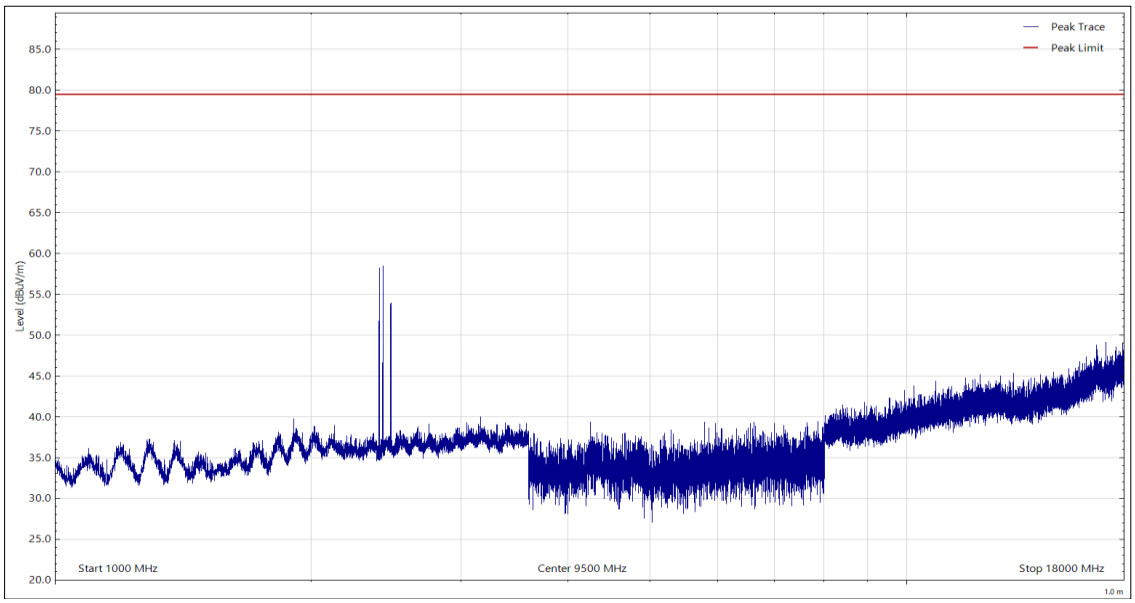

Figure 29 - 1 GHz to 18 GHz, Peak, Vertical - Z Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								Z

Table 33

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

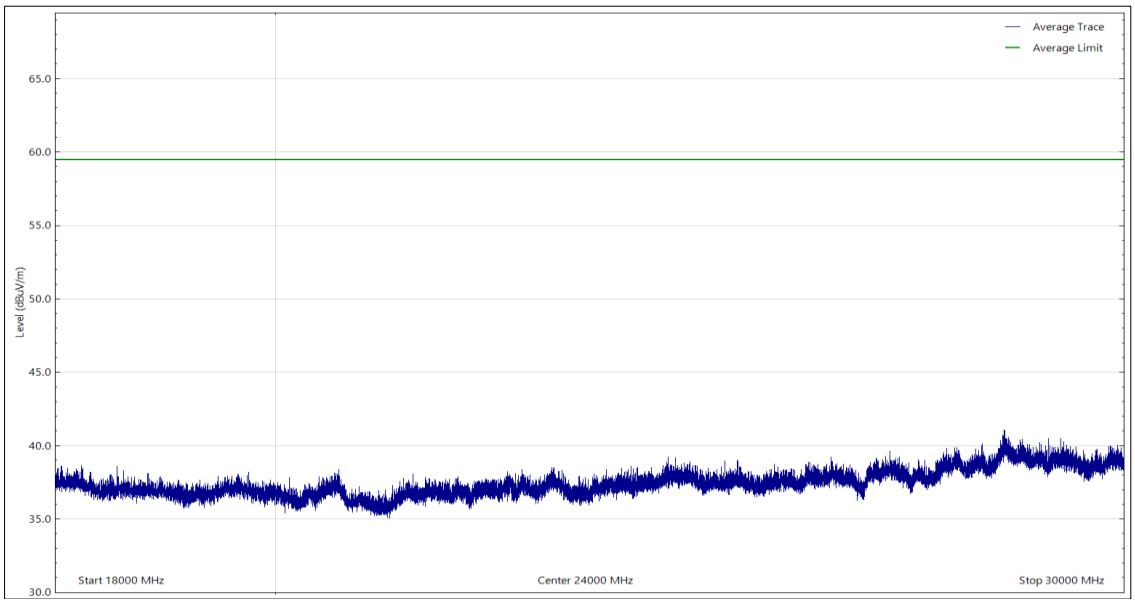

Figure 30 - 18 GHz to 30 GHz, CISPR Average, Horizontal - Z Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								Z

Table 34

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

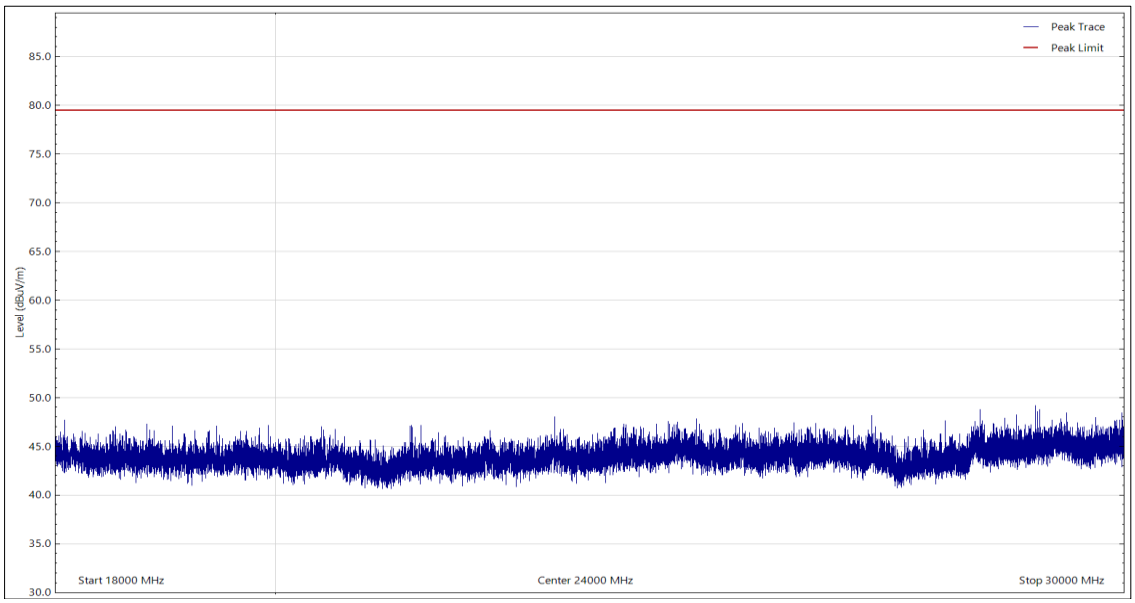

Figure 31 - 18 GHz to 30 GHz, Peak, Horizontal - Z Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								Z

Table 35

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

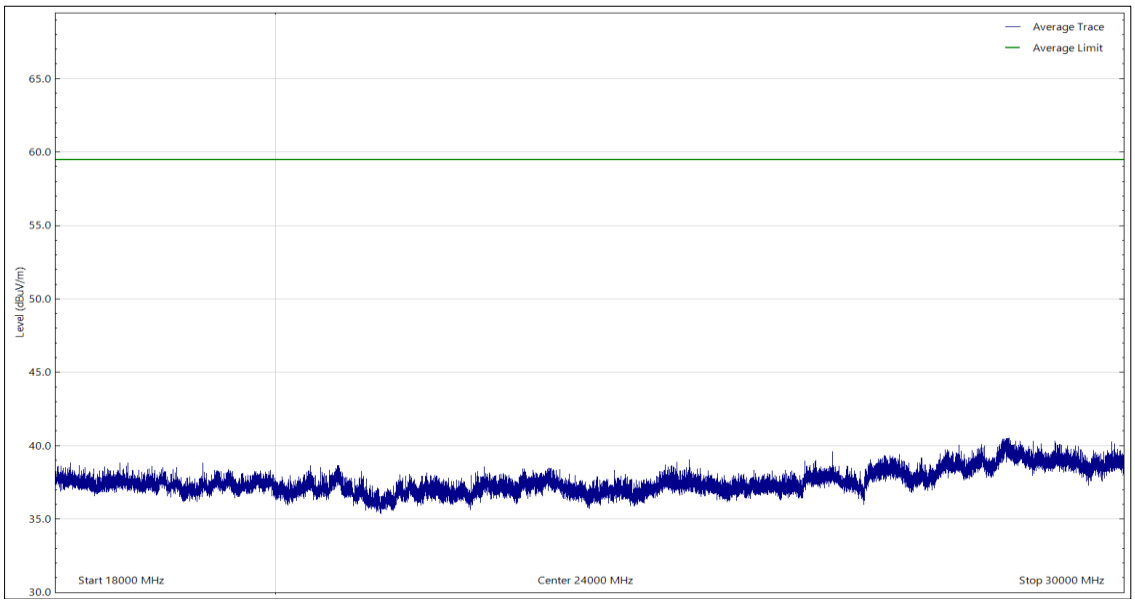

Figure 32 - 18 GHz to 30 GHz, CISPR Average, Vertical - Z Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								Z

Table 36

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

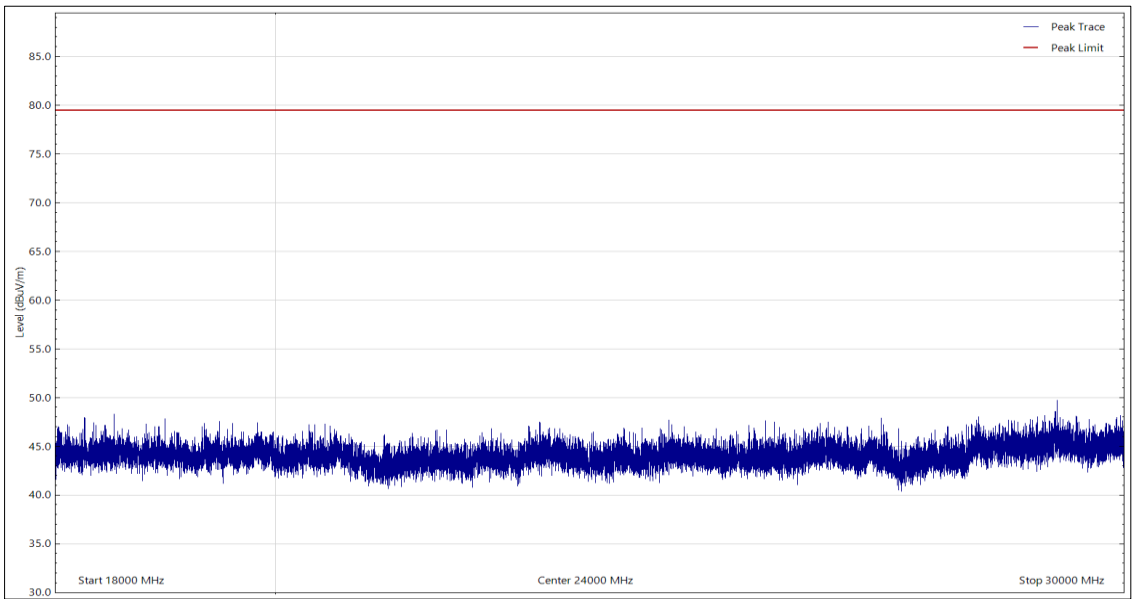

Figure 33 - 18 GHz to 30 GHz, Peak, Vertical - Z Orientation

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation	Orientation
*								Z

Table 37

*No final measurements were made as all peak emissions seen above the measurement system noise floor during the pre-scan were greater than 10 dB below the test limit.

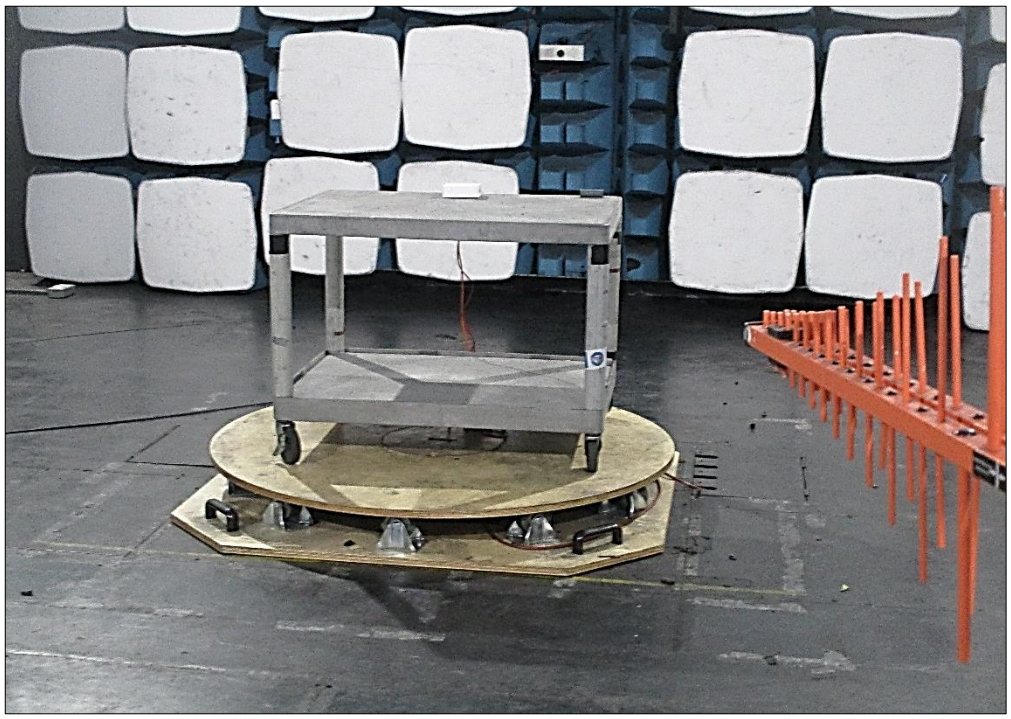

Figure 34 - Test Setup - 30 MHz to 1 GHz - X Orientation

Figure 35 - Test Setup - 1 GHz to 18 GHz - X Orientation

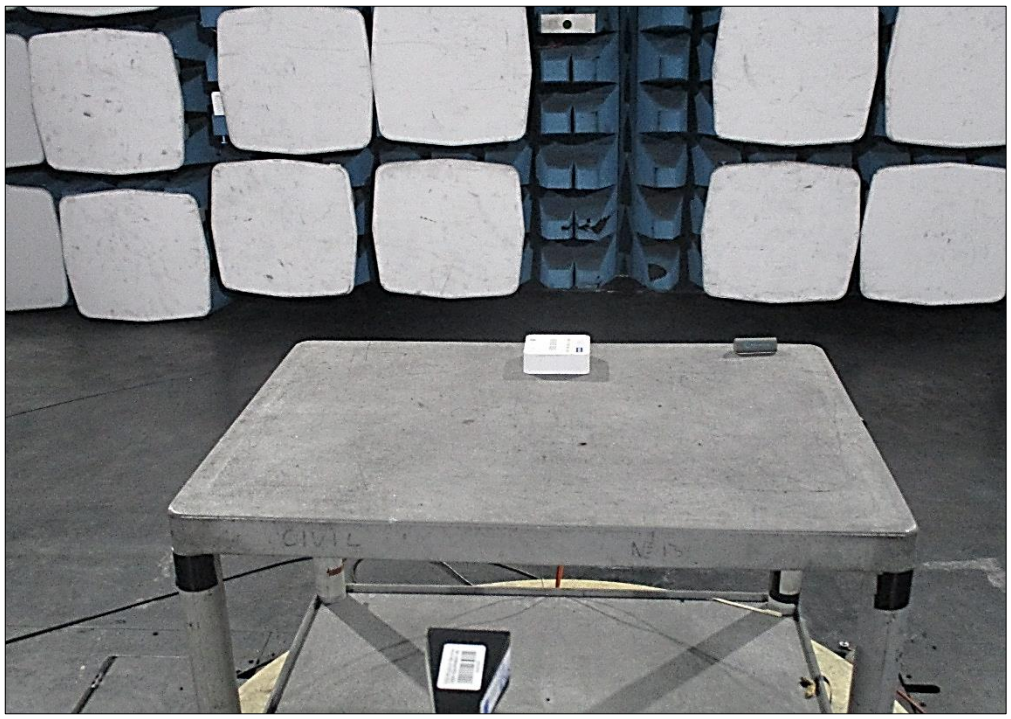

Figure 36 - Test Setup - 18 GHz to 30 GHz - X Orientation

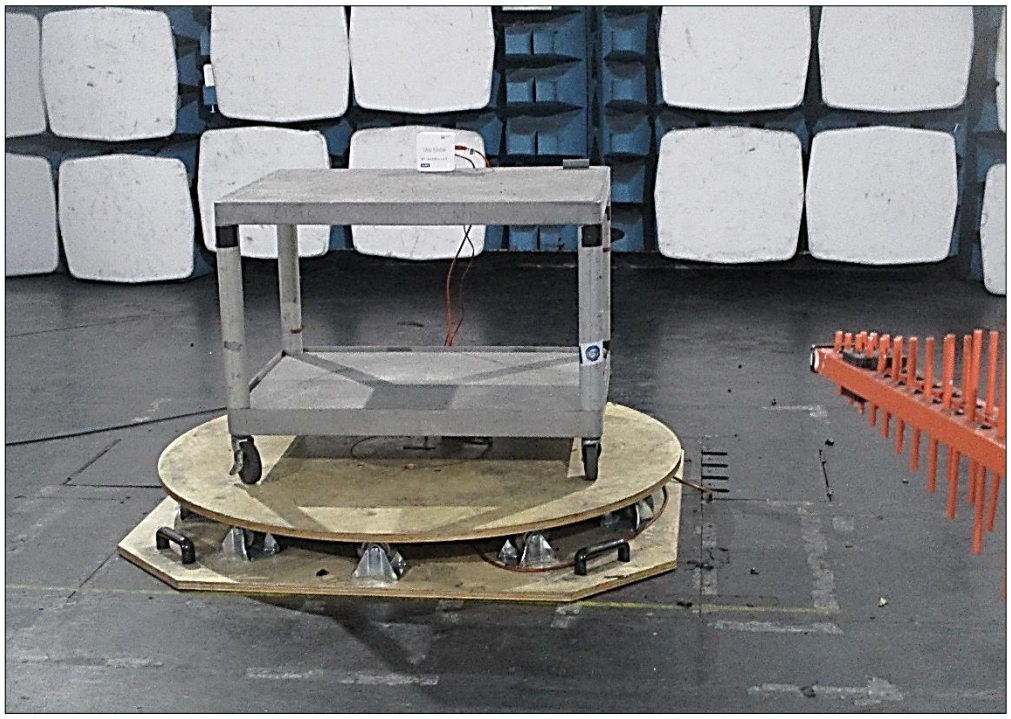

Figure 37 - Test Setup - 30 MHz to 1 GHz - Y Orientation

Figure 38 - Test Setup - 1 GHz to 18 GHz - Y Orientation

Figure 39 - Test Setup - 18 GHz to 30 GHz - Y Orientation

Figure 40 - Test Setup - 30 MHz to 1 GHz - Z Orientation

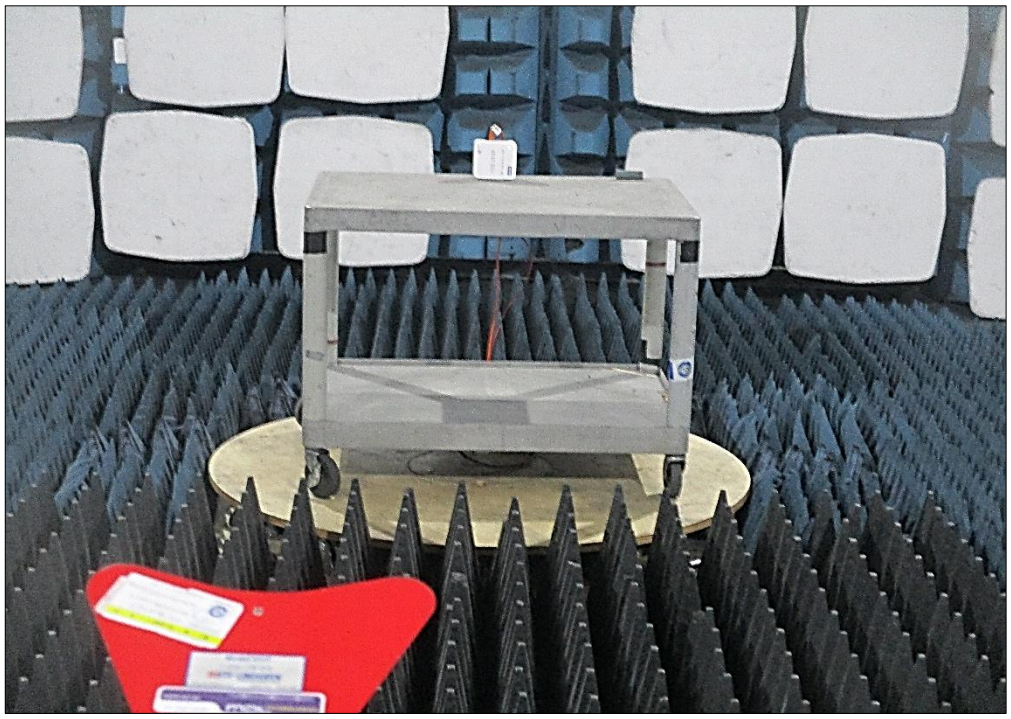

Figure 41 - Test Setup - 1 GHz to 18 GHz - Z Orientation

Figure 42 - Test Setup - 18 GHz to 30 GHz - Z Orientation

2.1.10 Test Location and Test Equipment Used

This test was carried out in Bearley EMC Chamber 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Antenna (DRG, 18 GHz to 40 GHz)	Link Microtek Ltd	AM180HA-K-TU2	230	24	23-Sep-2024
Pre-Amplifier (18 GHz to 40 GHz)	Phase One	PSO4-0087	1534	12	23-Sep-2023
Antenna (Bilog, 30 MHz to 3 GHz)	Schaffner	CBL6143	1858	24	10-Jan-2023
Screened Room (1)	Rainford	Hybrid	4160	36	11-Jan-2025
Cable (N-Type to N-Type, 7 m)	Teledyne Storm	SA90-195-7MTR	4173	12	13-Apr-2023
Mast controller	Innco Systems	Controller CO3000	4728	-	TU
Antenna (Double Ridge Guide, 1 GHz to 18 GHz)	ETS-Lindgren	3117	4737	24	11-Mar-2024
Test Receiver	Keysight Technologies	N9038A MXE	4974	12	22-Feb-2023
Emissions Software	TUV SUD	EmX V3.1.6	5125	-	Software
Cable (N-Type to N-Type, 3 m)	Rosenberger	LU7-036-3000	5163	12	13-Dec-2022
Cable (18GHz SMA 1m)	Rosenberger	LU7-071-1000	5164	12	13-Dec-2022
Turntable Controller	Maturo	Maturo NCD	5275	-	TU
Cable (K-Type to K-Type, 3 m)	Scott Cables	KPS-1501-3000-KPS	5405	12	13-Dec-2022
Broadband Pre-Amplifier (0.5 - 18 GHz)	Schwarzbeck	BBV 9718 D	5882	12	01-Mar-2023

Table 38

TU - Traceability Unscheduled

3 Test Equipment Information

3.1 General Test Equipment Used

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Scientific Ambient Monitor	Testo	622	5698	12	04-Mar-2023

Table 39

3.2 Customer Support Equipment

Instrument	Manufacturer	Type No	Serial Number	Calibration Period (months)	Calibration Due
Beacon	Bluvision	-	970771130215358638	-	NA
Router	D-Link	DGS-1008P	SY3R1H5004212	-	NA
I.T.E. Power Supply	Leader Electronics INC	NU90-J540167-I1	-	-	NA
Laptop	Innove	T480S	-	-	NA

Table 40

4 Incident Reports

No incidents reports were raised.

5 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

Test Name	Measurement Uncertainty
Radiated Disturbance	30 MHz to 1 GHz, Bilog Antenna, ±5.2 dB 1 GHz to 40 GHz, Horn Antenna, ±6.3 dB

Table 41

Worst case error for both Time and Frequency measurement 12 parts in 10^6.

Measurement Uncertainty Decision Rule

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115:2021, Clause 4.4.3 (Procedure 2). The measurement results are directly compared with the test limit to determine conformance with the requirements of the standard.

Risk: The uncertainty of measurement about the measured result is negligible with regard to the final pass/fail decision. The measurement result can be directly compared with the test limit to determine conformance with the requirement (compare IEC Guide 115). The level of risk to falsely accept and falsely reject items is further described in ILAC-G8.